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Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P99-55	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP99/05717	International filing date (day/month/year) 15 October 1999 (15.10.99)	Priority date (day/month/year) 16 October 1998 (16.10.98)
International Patent Classification (IPC) or national classification and IPC A23L 1/212, 2/02, 1/24		
Applicant SUNSTAR INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

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3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 31 March 2000 (31.03.00)	Date of completion of this report 15 December 2000 (15.12.2000)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP99/05717

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ 1-21 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____ 1-15 _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____ 16,17 _____, filed with the letter of _____ 18 September 2000 (18.09.2000)
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP 99/05717

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	7, 16, 17	YES
	Claims	1-6, 8-15	NO
Inventive step (IS)	Claims		YES
	Claims	1-17	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO

2. Citations and explanations

Documents (Documents cited in the international search report):

Document 1: JP, 9-154481, A (Kikkoman Corporation, et al.), June 17, 1997 (17.06.97)

Document 2: JP, 9-103262, A (Soc. Prod. Nestle SA), April 22, 1997 (22.04.97)

Document 3: JP; 8-131065, A (Hirosaki Maruuo K.K.), May 28, 1996 (28.05.96)

Document 4: JP, 6-181684, A (Aoba Kasei K.K.), July 5, 1994 (05.07.94)

Reference Documents:

Document A1: JP, 9-23859, A (Toyo Seikan Kaisha Ltd.), January 28, 1997 (28.01.97), [0009], (Family: none)

Document A2: JP, 9-23840, A (Japan Dotsusa K.K.), January 28, 1997 (28.01.97), [0009], (Family: none)

Explanation:

Concerning Claims 1 to 6 and 8 to 15

The inventions as described in each of Claims 1 to 6 and 8 to 15 lack novelty in the light of disclosures made in Documents 1 to 4.

In Document 1, paragraph [0007] states that "in the present invention "vegetable" shall include types of vegetables such as green vegetables, root vegetables and types of fruit vegetables, as well as types of fruit, that can be used as a source ingredient for seasonings such as any type of sauce or types of dressings. More specifically, Japanese radish, ..., cabbage, green onion, scallion, green pepper, cucumber, ... can be given as examples. Moreover, the ground product of the raw vegetable shall mean the product of the grinding of these types of raw vegetables using an ordinary grinding device or a grinding machine, or a crushed product crushed using an ordinary crushing device or crushing machine and excluding products which have undergone heat treatment, such as heating." Paragraph [0008] states that "the ground product of the raw vegetable with a pH of 3.3 to 4.5 is the ground product of the raw vegetables mentioned above with a pH of 3.3 to 4.5, preferably with a pH of 3.5 to 4.2 or even more preferably with a pH of 3.7 to 4.0. More specifically, this is a product obtained by adding a certain dose of acid to the vegetable during the grinding or during the crushing process to attain a pH of 3.3 to 4.5, or by adding a certain dose of acid to the ground product after the grinding or the crushing process in order to adjust the pH of the ground product to 3.3 to 4.5".

In Document 2, paragraph [0011] states that "the type of treated vegetable can be in the whole range of existing vegetables, The food (vegetable, fruit or meat) is ... mixed with the brine containing vinegar (between 0.5 and 4% acetic acid) and sodium acetate according to the desired pH value." Paragraph [0012] states that "the pH of the food phase is comprised between 3.7 and 6.0" and paragraph [0013] states "after processing with brine...made into a puree."

In Document 3, Claim 1 of the claims discloses "a method for the preparation of shredded food which uses an acidic water with a pH of 4 or less for vegetables submitted to distribution in refrigerators or freezers." Paragraph [0002] states that "in this specification "shredded food" shall mean food which has been shredded or crushed ... food which has been treated into a paste, etc.". Paragraph [0003] states that "types of vegetables which go brown easily due to enzymes including vegetables such as ..., Japanese radish." Paragraph [0015] states that "with the aim to change the pH ... the H⁺ ions to the electrode ... due to the type of electrolyte ... when electrolysing water." Paragraph [0016] states "Or, ..., the contact between the object being treated and the acidic water is carried out in running water since the pH can return to neutral with time." Paragraph [0017] states that "generally, ..., in the case of pH, the maximum reaction speed is at a certain pH and the left-right symmetry becomes a temple bell shape. Therefore, the slower the enzyme reaction speed becomes the further it moves toward both the acid side and the alkaline side." Paragraph [0018] mentions "vegetables which are green in colour."

In Document 4, Claim 2 of the claims discloses "a method for preventing the discoloration of fruit and vegetables and for maintaining the natural taste and flavour at the same time, characterised in that "fruits and vegetables [are incorporated with] L-ascorbic acid ..., an organic acid ..., and the pH of the solution is adjusted to a level that is between 3.5 and 5.5." Paragraph [0002] states that "the activity of the enzyme contained in ... becomes very brisk due to the break down of the cells by means of peeling or crushing, which leads to changes in colour due to the enzyme, such a browning, blackening or reddening." Paragraph [0003] states that "there are several types of method for preventing such discoloration

of types of fruit and vegetables and a conventional chemical means is simple L-ascorbic acid or a combination of L-ascorbic acid and an organic acid, The method of adding a solution when processing the fruits and vegetables to be treated thus, or the method of directly adding to a paste or a juice of the crushed fruits or vegetables also exist, ..., and are acknowledged to be effective to some extent."

Page 2, lines 10 to 12 of the specification of the present application states that "as a result of extensive research, the inventor found with respect to green vegetables that if acid is present when the vegetables are crushed or if acid is added to the puree immediately after crushing, the deactivation of enzyme and the bacteriostasis are sufficiently carried out" and page 4, lines 9 to 12 state that "the puree of the present invention contains acid, the pH of the puree is 4.1 or less and it is favourable for the pH to be less than 4.0 and even more favourable for the pH to be less than 3.7."

With respect to each of the inventions disclosed in Documents 1 to 4, and taking into consideration the fact that there is no reason why "green vegetables" of the present application should be excluded from "vegetables", no difference can be found between the "non-heated green vegetable puree", its "method for preparation" and the use in the "food" of said "puree" (and manufacture of the "food") as disclosed in the claims of the present application and the "ground product" with a specific pH, etc., the methods for preparation thereof or the use in "food" (or the manufacture of such "food") as disclosed in Documents 1 to 4 (NB. Document 1 discloses a product prior to the "heat treatment").

Concerning Claim 7

The invention as described in Claim 7 does not involve

an inventive step in the light of the disclosures made in Document 3 and Document 1.

Document 3 discloses the feature wherein after "modifying the pH" of a "vegetable" to "pH 4 or less" using "an acidic water" manufactured by "electrolysing water" containing "an electrolyte", "it is processed into a paste" and "frozen" and taking into consideration the disclosures (mentioned above) of Document 1 with respect to the disclosures in Document 3, it would be easy for a person skilled in the art to conceive of not using "an acidic water" manufactured by "electrolysing water" prior to the "processing into a paste state", but to "modify the pH" using "acid" immediately after it has been made into "a paste state" and then to "freeze" it.

Concerning Claims 16 and 17

The inventions as described in Claims 16 and 17 do not involve an inventive step in the light of the disclosures made in Documents 1 to 4 and the application of common practice.

It is common practice to adjust the fineness of the grain in a puree according to the type of vegetable, etc., taking into consideration factors such as texture (see, if necessary, Documents A1 and A2) and since it would also be common practice to adjust the conditions of the grinding machine being used, it would be easy for a person skilled in the art to conceive of selecting the fineness of the grain and the number of blades in the grinding device used with respect to the inventions disclosed in Documents 1 to 4.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The claims and the specification use the words "green vegetables". However, not only is the scope of the object unclear in the present application, but the reason for making "green vegetables" the object in the specification is also unclear.